REMARKS

Present Status of the Application

In Final Office Action, claims, 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (U.S. Patent 6,435,721; hereinafter Inoue). Claims 1, 2, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Ishikawa (JP 2000-120664). Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Mori et al. (U.S. Pub. 2002/0025089; hereinafter Mori). Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Ishikawa and Mori. Applicants have amended independent claim 1 and cancelled claims 5 and 8. Claim 9 has been also added.

Claims 1-4, 6-7, and 9 remain pending in the present application, and reconsideration of those claims is respectfully requested.

About Amendments

Claim 1 has been amended based on FIG. 3. Newly added claim 9 is also supported by FIG. 3.

Discussion of the claim rejections under 35 USC 102

Claims, 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue. Applicants have amended independent claim 1. Applicants respectfully traverse the rejections for at least the reasons set forth below.

1. In the claimed invention as recited in claim 1, also referring to FIG. 3, the height difference H1 is greater than zero and can up to two microns. This also indicates that the ridges are not all in equal height. Particularly, the inner ridge is higher than the outer ridge.

Claim 9 has further defined the ridge structure with the slope top surface.

2. In re Inoue, the Office Action has referred to Fig.2 of Inoue for rejections. According to the newly amended claim 1, Inoue does not specifically disclose the claimed features. The flange 13 has the grooves 13a, 13b. However, the top or bottom surface of the flange 13 is at the same height. This can be seen that the lower surface of the flange 13 is contacting on the supporting surface 14a on the plate 14.

Likewise, Inoue in other figures also shows the same condition in Fig. 2 without disclosing the currently amended features.

For at least the foregoing reasons, claim 1 is not disclose by Inoue. Dependent claims 2, 6, and 7 are not disclosed by Inoue with at least the same reasons in claim 1.

Discussion of the claim rejections under 35 USC 103

Claims 1, 2, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Ishikawa. Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Mori. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Ishikawa and Mori.

Applicant respectfully traverse the rejections for at least the reason set for the below.

3. As the foregoing reasons applied to claim 1, Inoue does not disclose the newly amended features recited in claim 1 and the feature recited in newly added claim 9.

4. In re Ishikawa, Ishikawa is cited in combination with Inoue to reject claims 1, 2, 6, and 7. Applicants respectfully disagree.

The outer cylinder 7 of Ishikawa has the single slant surfaces 7a and 7b without ridge/groove structures.

In further discussions, as shown in Fig. 10 of Inoue in the position at rest, the circumferential projection 3d on the lower surface outer circumferential portion of the flange 3 is in intimate contact with the thrust support 4a, and it is an object thereof to solve the problem of lack of float up force acting on the rotating shaft 2 which is caused by the fact that immediately after rotation of the rotating shaft 2, the lubricating agent 5 hardly moves into the space between the grooves 3b and the thrust support 4a (please refer to Column 1, line 45 to Column 2, line 11).

In contrast thereto, when the lower thrust surface is formed to have a tapered shape which is as high as the inner radial side as shown in, for example, Fig. 4 (c-e) of Ishikawa, a clearance will be formed by itself between the end surface outer peripheral portion of the flange and the tapered thrust surface opposing thereto even if the bearing is in a position at rest. In this situation, sufficient lubricating agent should be present within this clearance. Accordingly, the object of Inoue to be solved will not be realized in Ishikawa. In that case, it will be hard to imagine that any motivations of applying the arrangement as disclosed in Figs. 7 and 8 of Inoue to Ishikawa will arise. Accordingly, we do not think that claim 1 of the present application is obvious over Inoue and Ishikawa.

Indeed, Ishikawa does not modify Inoue to claimed features as recited in independent claim 1 and dependent claims 2, 6 and 7.

5. In re Mori (see para. [0027]), the flatness is referring to the end surfaces 3b1 and 3b2 of the flange portion 3b. The flatness does not specifically require the decreasing in height for the dynamic pressure generating groove area. Even further, as the feature recited in currently amended claim 1, Mori also does not disclose that the lower surface level at the surface 7c1 of the central region.

Mori does not further modify Inoue and Ishikawa into the at least claimed features recited in claim 1.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 1 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-4 and 6-7 patently define over the prior art references as well.

CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-4, 6-7 and 9 of the present application patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
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